ORIGINAL

DIVISION OF CONSUMER ADVOCACY
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BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Application of HAWAIIAN ELECTRIC COMPANY, INC. Approval of Rates Increase and Revised Rate Schedules and Rules.	DOCKET NO. 2008-0083

DIVISION OF CONSUMER ADVOCACY'S DIRECT TESTIMONY (COST OF SERVICE/RATE DESIGN)

Pursuant to the Schedule of Proceedings approved in Order Approving, with Modifications, Stipulated Procedural Order filed on January 15, 2009 and amended in Order Amending Stipulated Procedural Order filed on January 21, 2009, the Division of Consumer Advocacy submit its **DIRECT TESTIMONY (COST OF SERVICE/RATE DESIGN)** in the above docketed matter.

DATED: Honolulu, Hawaii, April 28, 2009.

Respectfully submitted,

By Catherine P. Awakuni
CATHERINE P. AWAKUNI
Executive Director

DIVISION OF CONSUMER ADVOCACY

T-5

M. BROSCH

CA-T-5
DOCKET NO. 2008-0083

DIRECT TESTIMONY AND EXHIBITS

OF

MICHAEL L. BROSCH

ON BEHALF OF
THE DIVISION OF CONSUMER ADVOCACY

SUBJECT: Cost of Service Studies, Rate Increase Distribution, Rate Design & Tariffs.

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Q. PLEASE STATE YOUR NAME.

A. My name is Michael L. Brosch.

Q HAVE YOU SUBMITTED TESTIMONY IN THE INSTANT PROCEEDING ON BEHALF OF THE DIVISION OF CONSUMER ADVOCACY, HEREINAFTER REFERRED TO AS CONSUMER ADVOCATE?

A. Yes. I am sponsoring testimony as CA-T-1 in this proceeding. My qualifications are summarized in CA-100 which was previously filed with the CA-T-1 testimony.

Q, WHAT IS THE PURPOSE OF THE TESTIMONY THAT YOU ARE NOW SPONSORING?

A. This testimony addresses Class Cost of Service ("CCOS") Study allocations, the distribution of revenue increase amounts among rate classes and the rate design issues that are raised in this Docket.

Q. WHAT COST OF SERVICE POLICY ISSUES WERE RAISED BY THE CONSUMER ADVOCATE IN PRIOR HECO RATE CASES?

A. Two fundamental class cost allocation issues were raised in Docket Nos. 04-0113 and 2006-0386, HECO's 2005 and 2007 test year rate cases. The first issue involves HECO's use of a theoretical "minimum system" study to classify a significant portion of its distribution network of poles, conduit, conductors and transformers as "customer-related" costs to be allocated

based upon the number of customers being served. This results in a disproportionately large allocation of such distribution network costs to the residential and smaller commercial classes that contain the largest number of customers. The second issue in these prior cases involved HECO's classification of all of its Production O&M expenses as "demand" costs, with no allocation based upon relative energy output.

Q. HOW WERE THESE PREVIOUSLY DISPUTED CCOS ISSUES ADDRESSED IN THE COMPANY'S PRESENTATION IN THIS DOCKET?

A. HECO has modified its classification of non-fuel production O&M expenses from its previous 100% demand-related classification of these expenses by adopting the Consumer Advocate's methodology for classification of Production O&M expenses. In the absence of a detailed study of Production O&M expenses, HECO is using the FERC predominance method to classify such costs in its CCOS studies.[1] This change eliminates one of the disputed issues from the last rate case.

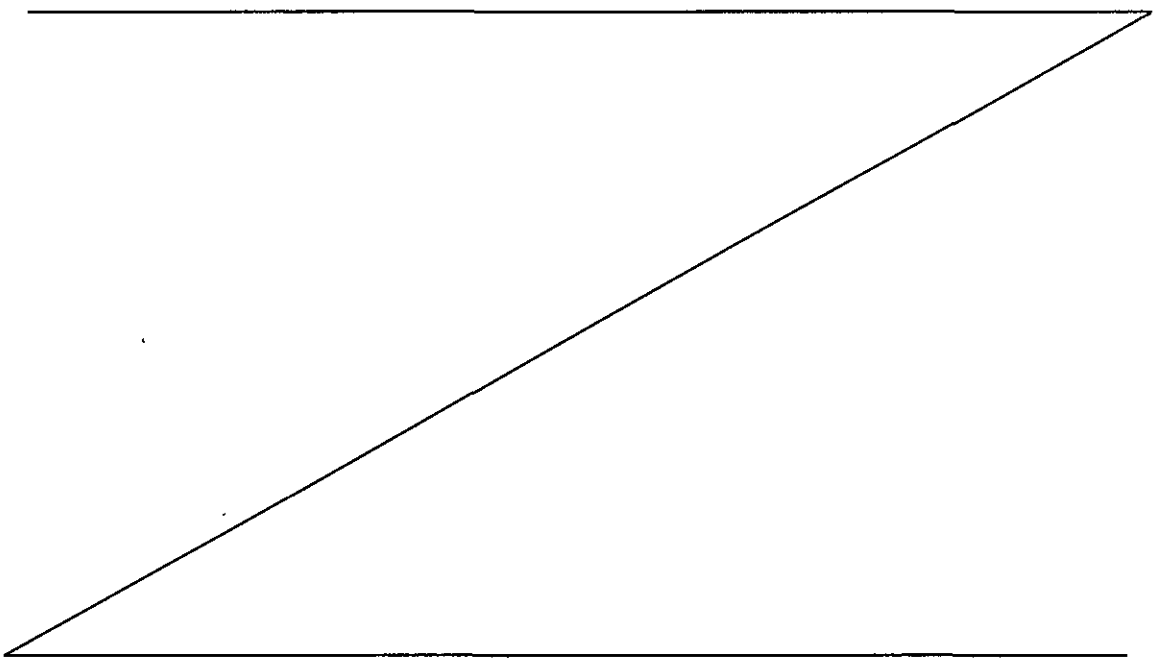
To address the other issue, HECO has prepared two scenarios of its CCOS studies, one using the prior "minimum system" theory to estimate a customer classification for part of the distribution network and a second scenario reflecting the Consumer Advocate's view that all of such costs should

[1] HECO T-22, page 16.

be classified as caused by "demand" rather than the number of customers being served.

Q. HAVE YOU PREPARED ANY EXHIBITS IN CONNECTION WITH THIS TESTIMONY?

A. No. Because HECO has prepared and presented alternative cost allocation studies that conform to the cost allocation recommendations I made on behalf of the Consumer Advocate in both of these prior Dockets and because CCOS studies should be relied upon as only a general guide in the formulation of revenue distribution and rate design, I have relied upon the Company's calculations to support the recommendations appearing in this testimony, rather than preparing independent CCOS studies for this purpose.



Q. THE COMPANY HAS PRESENTED A SERIES OF STEPPED REVENUE INCREASES IN THIS DOCKET THAT ARE SUMMARIZED IN HECO T-1. THESE PROPOSED STEP INCREASES INCLUDE AN INTERIM RATE INCREASE, PLUS A STEP INCREASE FOR CAMPBELL INDUSTRIAL PARK COMBUSTION TURBINE UNIT ONE ("CIP CT-1"), FOLLOWED BY A PERMANENT BASE RATE CHANGE.[2] IS THE CONSUMER ADVOCATE PROPOSING SUCH STEPPED RATE INCREASES?

A. No. The Consumer Advocate has calculated a single test year 2009 revenue requirement of $62.7 million that is set forth in Exhibit CA-101. This increase is based upon an "average" rate base treatment of the CIP CT-1 unit for the reasons stated in Mr. Carver's Direct Testimony.[3] With this in mind, the rate increase distribution that is discussed in the following testimony does not contemplate step rate changes.

I. CLASS COST OF SERVICE.

Q. WHAT IS A CLASS COST OF SERVICE STUDY?

A. A CCOS study is often prepared by a utility within a rate case to provide an estimated allocation of the utility's overall cost of service (its revenue requirement) to the various rate classes that are served by the utility. The most common form of CCOS is an "embedded" also known as an "accounting"

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2 Rate Case Updates, HECO T-23, page 2 and Attachments 1, 2 and 3.

3 CA-T-3, pages 7-14 and pages 19-21.

class cost of service study that assigns responsibility among each customer class for the test period overall cost of service using actual test year accounting costs. A CCOS is used to estimate the relative rates of return being earned by serving each class at present, currently effective and proposed rates. HECO's embedded CCOS studies are prepared on the same basis that its revenue requirement was determined, including all of the estimated rate base components and operating expenses that are the subject of the Consumer Advocate's ratemaking adjustments.[4]

Q. HOW CAN CLASS COST OF SERVICE STUDIES BE USED IN A RATE CASE?

A. CCOS information can be useful as a general guide for Commission decisions regarding how much of the overall revenue change in this Docket should be attributed to specific customer classes and rates. An additional purpose for conducting embedded cost of service studies is to estimate the "unit costs," which divide allocated costs per unit of demand, energy or by customer, to serve as a guide to rate design analysis after revenue distribution decisions have been made.

[4] In its Rate Case Update, HECO actually presents numerous different scenarios for revenue requirements, as explained by HECO T-23 and summarized in Attachment 1 to the T-23 Rate Case Updates. However, Rate Case Updated CCOS studies are prepared by Mr. Young (HECO T-22) based upon only one of the revenue requirements scenarios presented in the Rate Case Updates.

Q. PLEASE DESCRIBE THE COST OF SERVICE STUDIES THAT HAVE BEEN PREPARED BY HECO IN THIS DOCKET?

A. Mr. Young (HECO T-22) has prepared series of embedded CCOS studies and a marginal energy cost study that are summarized in Exhibits HECO-2201 through HECO-2210 and HECO-2212, respectively.[5] In Direct Testimony, multiple scenarios of CCOS studies were prepared by HECO to show the effects of:

- Comparing proposed rate levels to "present" permanent rates established in Docket No. 04-0113 versus the "current" interim rates in effect from Docket No. 2006-0386.[6]
- Displaying cost allocations to the existing eight rate schedules, versus the proposed six rate schedules after Schedule H is eliminated and Schedule P is consolidated into a directly served ("DS") and an all other Schedule P class.[7]

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5 The marginal energy costs are generally used as a guide or floor for off-peak energy rates in time-of-use rate options, but were not used to establish any specific rate levels in this case (CA-IR-485).

6 HECO-2203

7 HECO-2201 versus HECO-2202. In settlement of Docket No. 2006-0386, HECO agreed to design a separate customer class for Schedule P customers who are directly served from a dedicated transformer and to eliminate Schedule H which had been used to serve qualifying end-use customers, as noted by HECO T-22 at 3.

- Classifying customers costs using a hypothetical minimum system approach versus the 100 percent demand classification advocated by the Consumer Advocate.[8]
- Presentation of the Company's proposed cost allocations among customer classes under both the hypothetical minimum system versus 100 percent demand approaches,[9] showing assumed rate increases that would yield equal class rates of return.

Beyond these listed embedded CCOS approaches, HECO-2212 presents a summary of the Company's estimated marginal energy costs. This type of cost study considers the costs associated with serving an additional or "marginal" unit of energy at differentiated points in time and does not rely upon actual recorded or projected accounting costs. Thus, the marginal cost study cannot be reconciled to the costs used to determine the revenue requirement, but instead is based upon more theoretical analyses of the rates of change in energy costs on a time differentiated basis. The results of marginal cost studies are useful in considering how to design specific rates and tariffs that are economically efficient, with an awareness of how costs and pricing revenues may interact to influence customer behavior and utility profitability.

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8 HECO-2201 versus HECO-2202. In settlement of Docket No. 2006-0386, HECO agreed to present both the minimum system approach and the 100% demand classification of distribution network costs in its Direct Evidence in its next rate case, as discussed by HECO T-22 at 2-3.

9 HECO-2204 and HECO-2206.

The Company's embedded CCOS is used as the main basis of analysis in support of HECO's present and proposed rates, while the marginal cost study is relied upon by the Company in the design of specific energy rates.

Q. IN ITS RATE CASE UPDATE, HECO T-23 PRESENTED SEVEN DIFFERENT REVENUE REQUIREMENT SCENARIOS FOR COMMISSION CONSIDERATION. [10] WHICH OF THESE SCENARIOS IS ASSERTED AS THE COMPANY'S DESIRED REVENUE REQUIREMENT?

A. In his Rate Case Update, Mr. Young (HECO T-22) indicates reliance upon "Attachment 2" of HECO T-23. This is the HECO revenue requirement scenario that assumes annualized (rather than average rate base) treatment of the new CIP CT-1 generating unit, exclusion of HCEI Implementation Study costs, no updating to HECO's lower test year sales forecast and a resulting $100.0 million overall rate increase.

Q. DID HECO ALSO UPDATE ITS CCOS STUDY AS PART OF THE RATE CASE UPDATES AND MULTIPLE REVENUE REQUIREMENT SCENARIOS?

A. Yes. Mr. Young presents CCOS revisions containing both the "with minimum system" and the "100% demand classification" treatment of distribution network costs in his Rate Case Update HECO T-22. However, as noted

[10] See Rate Case Update HECO T-23, Attachment 1 and the calculations in Attachments 2 through 8 that support the summary on Attachment 1.

earlier, only one of the revenue requirement scenarios was selected for updated CCOS development by Mr. Young.

Q. WHAT DOES THE COMPANY'S RATE CASE UPDATE EMBEDDED COST OF SERVICE STUDY INDICATE REGARDING HOW THE REVENUE INCREASE ULTIMATELY GRANTED IN THIS PROCEEDING COULD BE DISTRIBUTED AMONG CUSTOMER CLASSES?

A. The latest revised Cost of Service guidance for the Company's proposed Rate Case Update revenue requirement appears at page 6 of 39 of Mr. Young's (HECO T-22) Rate Case Update. This Schedule is an update of page 2 of HECO-2205, indicating estimated Rate of Return ("ROR") levels by class at Current Effective Rates and then at Proposed Rates. According to this summary, at current effective interim rate levels and with all of HECO's ratemaking proposals and adjustments, the overall business is calculated to be earning an overall ROR of 4.86 percent on rate base. Relative to this overall ROR, all customer classes are shown to be earning a positive ROR, with the Residential Class (Schedule R) estimated to be contributing an ROR of 3.97 percent, or about 82 percent of the overall average ROR of 4.86 percent. Thus, the Company's study would suggest that Schedule R current residential rates are producing earnings that are within 18 percent of parity with the system average rate of return and that Residential customers need not be burdened with an above-average revenue increase.

The same HECO Rate Case Update CCOS study shows commercial customers on Schedule J and the lighting customers on Schedule F to be producing a positive but somewhat below-average ROR. Conversely, this Rate Case Update CCOS study also shows that several of the commercial rates (Schedules G, DS and P) are contributing somewhat above-average RORs at current effective rates. In the Revenue Distribution portion of this testimony, I will further discuss CCOS results and how these results could be considered in distributing any rate increase among customer classes.

Q. IN THIS DISCUSSION OF CLASS RETURNS IN THE COMPANY'S RATE CASE UPDATE CCOS, YOU HAVE FOCUSED UPON PAGE 2 OF REVISED HECO-2205, WHERE RESULTS ARE PRESENTED AT "CURRENT EFFECTIVE RATES", INSTEAD OF PAGE 1 THAT DISPLAYS CLASS RETURNS AT "PRESENT RATES". WHY SHOULD THE PAGE 2 RESULTS BE UTILIZED IN GUIDING THE DISTRIBUTION OF REVENUE INCREASES AND NOT PAGE 1?

A. A final rate order has not been issued by the Commission in Docket No. 2006-0386, so HECO's Present Rates (page 1 of HECO-2205) reach back to Docket No. 04-0113 and to the 2005 test year.[11] The "Present Rates" based on the 2005 test year therefore do not recognize any of the rate increase revenues to be awarded in the 2007 rate case. In the 2007 rate

[11] HECO T-22, at 1.

case, a settlement was reached that assigned specific percentage rate increases among classes to move the resulting class revenue and ROR levels toward indicated cost of service.[12] HECO's currently effective interim rates from Docket No. 2006-0386 are reflective of this targeted revenue distribution to be recognized in the final rate order and therefore best reflect class returns under current conditions. In my opinion, the HECO presentation of class returns at "Present Rates" on page 1 of HECO-2205[13] should be ignored because the relative class ROR levels at "Present Rates" do not reflect any of the movement toward cost of service that was already accomplished in the 2007 rate case.

Q. WHAT DOES THE COMPANY'S EMBEDDED COST OF SERVICE REVEAL WITH RESPECT TO RATE DESIGN?

A. HECO-2208 and HECO-2210 summarize the Unit Cost Components by Rate Class using HECO's revenue requirement assumptions and its minimum system cost classification methods at proposed rates and at equalized class return levels, respectively.[14] If not for the problems described in this testimony

12 See Docket No. 2006-0386 Stipulated Settlement Letter dated September 5, 2007, and Exhibit 1, page 25 which provides for revenue increase distribution percentages set forth in HECO T-20, Attachment 1 to the Settlement where were explained as, "This settlement considers the positions of HECO, the Consumer Advocate, and the DOD on cost of service and movement of inter-class revenues towards the respective cost of service positions."

13 Also as updated in Rate Case Update, HECO T-22, page 5 of 39.

14 HECO-2208 was updated in Rate Case Update HECO T-22 at page 8 of 39.

regarding the theoretical "minimum system" calculations, these unit cost study results could be useful to compare rate elements within individual tariffs, such as customer charges, demand charges and energy rates, to the underlying calculated per unit cost to provide service. Unfortunately, HECO's calculations seriously overstate unit costs because HECO has classified large amounts of distribution network poles, lines and transformers costs as Customer Costs, even though the existence of customers does not really drive such costs. Thus, HECO's "Unit Customer Cost" calculations must be discounted in any evaluation of rate design parameters. In a later "Rate Design" portion of this testimony, I will discuss the Consumer Advocate's CCOS Unit Cost results in connection with specific rate design proposals.

Q. ASIDE FROM DIFFERENCES IN OVERALL REVENUE REQUIREMENT AND THE TWO ISSUES YOU MENTIONED, IS THE COMPANY'S EMBEDDED CCOS BASED UPON REASONABLE METHODS AND PROCEDURES?

A. In general, yes it is. The Company's study employs a traditional approach in which costs are first functionalized into production, transmission, distribution and customer-related categories. Once functionalized, the costs are classified as demand, energy, or customer driven, and then are allocated among

customer classes by applying allocation factors to the functionalized costs.[15] The general procedures employed by Mr. Young in this Docket are widely accepted and, with only one remaining exception, are reasonable as a rate design guide for use by a utility with HECO's service characteristics.

Q. WHAT IS THE CONSUMER ADVOCATE'S "ONE REMAINING EXCEPTION" REGARDING HECO'S CCOS METHODOLOGY?

A. I continue to recommend that the Commission discount any results from CCOS studies that treat distribution network costs partially as "customer-related" based upon any theoretical minimum-system study results. This issue was presented by the Consumer Advocate in the Company's 2005 and 2007 rate cases. In this Docket, the Commission should rely only upon the CCOS study scenarios prepared by HECO that treat such distribution costs as 100% demand costs. By reference to Mr. Young's Rate Case Update, this means that the CCOS results captioned "Cost of Service Based on Minimum System Study" should be discounted and the amounts captioned, "COS Based on All Distribution Network Demand Related" should be relied upon.[16]

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15 These sequential steps are described at HECO T-22, pages 7 through 14 and depicted at HECO-2212.

16 For example, Rate Case Update HECO T-22, Attachment 1, pages 1 and 2 display both approaches, while pages 5 and 6 ("demand related") should be used in place of pages 3 and 4 ("minimum system study").

Q. IS JUDGMENT NECESSARILY INVOLVED IN THE CONDUCT OF ANY EMBEDDED CCOS?

A. Yes. Financial and operational data must be analyzed and interpreted by the cost analyst to determine reasonable approaches to the many decisions involved in defining cost classification and allocation methods that will produce meaningful results. Thus, there is no single "correct" embedded cost of service study because of the many judgmental decisions that must be made. However, when alternative approaches are presented as in the instant case, the Commission should place greater weight upon the approach that is supported by reasonable evidence and cost causation justification.

Q. IS THERE A PRIMARY DECISION WHERE JUDGMENT IS REQUIRED IN THE CONDUCT OF AN ELECTRIC UTILITY CCOS?

A. Yes. The single most important judgment in conducting such a study is the selection of the most appropriate production and transmission demand-related cost allocation factor. For this allocation factor, HECO has employed an Average and Excess Demand ("AED") allocation that weights together peak demand data and average demand data, so as to recognize that production and transmission costs are incurred by HECO to meet customer demands during peak periods, as well as throughout the balance of the year (average demands). The AED allocation approach is particularly well suited to HECO, given the Company's relatively high system load factor and non-seasonal

demand characteristics.[17] Load factor is the ratio of average demand divided by the product of peak demand times all hours in the period and is an indication of how much of the time demand levels are relatively high in relation to peak demands. I concur in the use of the Company's utilization of the AED allocation approach for production and transmission demand cost allocations.

Q. HAVING AGREED WITH HECO'S AED ALLOCATION OF PRODUCTION AND TRANSMISSION PLANT, PLEASE ELABORATE REGARDING THE MINIMUM SYSTEM DISTRIBUTION CLASSIFICATION ISSUE.

A. The minimum system approach classifies a large portion of the costs associated with the network of electric distribution poles, lines, conduit and transformers as "customer-related" costs. In addition, the costs of customer service lines and customer meters are classified entirely as "customer-related" costs. The Consumer Advocate agrees with the classification of service lines and meters as "customer" costs, since these facilities and the related expenses incurred to maintain the facilities are required to connect and serve discrete customers. However, HECO's proposed classification of the distribution network of poles, lines and transformers do not vary directly with the number of customers served is inappropriate and such network costs should be classified entirely as "demand," rather than partially as "customer"

[17] According to Electronic Spreadsheet CCOS support files at Tab="X HLADADA" the system load factor for the test year is 66.5 percent.

costs. The HECO studies conducted to determine an estimated fraction of poles, lines and transformers to be classified as "customer-related" are inherently unreliable and the theoretical support for such a "customer-related" classification is weak, at best, as more fully discussed in the next section of this testimony.

II. DISTRIBUTION SYSTEM - CUSTOMER CLASSIFICATION ISSUE.

Q. IN THE HECO CCOS SCENARIOS THAT ARE BASED UPON THE "MINIMUM SYSTEM STUDY", WHAT PORTION OF ELECTRIC DISTRIBUTION POLES, LINES AND TRANSFORMERS ARE DEEMED TO BE COSTS CAUSED BY THE NUMBER OF CUSTOMERS BEING SERVED, AND THUS CLASSIFIED AS CUSTOMER-RELATED COSTS?

A. The HECO embedded CCOS assumes that 48 percent of the costs of distribution poles, 42 percent of costs associated with distribution conductors (lines) and 60 percent of distribution transformer costs are caused or influenced by the number of customers being served, with the reciprocal of these percentage values being classified as demand-related.[18]

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[18] See HECO-WP-2203, electronic Excel file at HPVSDAT and Pri VS SEC Dist Lines – P1.

Q. PLEASE EXPLAIN WHY THE CLASSIFICATION OF ANY PORTION OF ELECTRIC DISTRIBUTION POLES, LINES AND TRANSFORMERS AS "CUSTOMER" RELATED COSTS IS CONTROVERSIAL.

A. The addition of a new customer (or disconnection of an existing customer) simply does not cause these costs to be incurred (or avoided), because these costs are "network" costs for facilities that are designed and constructed to serve the demands of all customers in a given geographical area. HECO has not shown any positive correlation between the number of customers served and the amount invested in distribution network facilities. The costs that can be clearly shown to vary directly with the connection of a new customer are only those costs that must be added each time a new customer is established – specifically, these are the costs associated with the service line to the customer and his meter, as well as the related O&M costs to read meters, conduct billing and provide customer contact services.

HECO has improperly attributed part of these distribution network costs, including poles, lines, conduits and transformers, to the customer-related classification. While this treatment is consistent with one of several alternatives documented within the NARUC Cost Allocation Manual that is relied upon by HECO, if supported by appropriate cost analyses, this practice

has proven to be controversial and has been abandoned by electric utilities in other jurisdictions.[19]

Q. ACCORDING TO MR. YOUNG AT PAGE 15, "FOLLOWING THE NARUC COST ALLOCATION MANUAL, HECO HAS USED THE MINIMUM SIZE METHOD TO ALLOCATE THESE COSTS TO CUSTOMER-RELATED AND DEMAND-RELATED COMPONENTS." DOES THE NARUC COST ALLOCATION MANUAL SPECIFY USE OF THE MINIMUM SIZE METHOD?

A. No. The NARUC Cost Allocation Manual that is referenced by Mr. Young actually describes two different methods that could be used to estimate demand and customer components of distribution facilities: (a) the minimum size method, and (b) the minimum intercept method. These two analytical methods are theoretical studies intended to estimate a customer versus demand breakdown of distribution network facilities and related costs. The "Minimum Size" method is based upon trended cost analysis and estimation of the costs that might theoretically be incurred to re-build the entire distribution network using only the smallest sized poles, conductors and line transformers that may be employed by the utility. Then, having estimated costs for this theoretical minimum-sized system, it is assumed that all additional costs in the

[19] For example, Public Service Company of Oklahoma and PSI Energy (in Indiana) have included only distribution services and meters as "customer" costs, with the balance of distribution network facilities classified as "demand"

actual distribution network must have been incurred to "up-size" this minimum-sized system to meet actual demand levels.

Q. HAS THE NARUC COST ALLOCATION MANUAL AND ITS PROPOSED CLASSIFICATION APPROACH FOR DISTRIBUTION SYSTEM POLES, LINES AND TRANSFORMERS BEEN UNIFORMLY ADOPTED BY REGULATORS?

A. No. The NARUC manual was last published in 1992 and its treatment of distribution network cost classifications is not uniformly employed. There is really no consensus among regulators regarding how to approach this issue and I have observed several states in which electric distribution system poles, lines and transformers are treated entirely as demand-related costs because of the theoretical problems and controversy surrounding isolation of a customer-related component of such costs.

HECO'S alternative CCOS presentation using a "100% demand" classification of distribution network costs avoids the need for unreliable and highly theoretical minimum system studies by treating all distribution network facilities (poles, lines, conduit, line transformers) with a demand classification, recognizing that such facilities are sized and built to meet localized customer demand levels on an economical basis. The only distribution costs that are directly caused by adding a new customer are the costs closest to the

customer -- the meters and service line drops required to physically connect the customer to the network.

Q. WHY IS COST CAUSATION IMPORTANT TO THE ISSUE OF CLASSIFYING DISTRIBUTION NETWORK COSTS?

A. Cost causation is the underlying principle behind cost of service study allocations. The principle requires a customer class to bear responsibility for utility costs in proportion to the levels at which that class "causes" the utility to incur costs. For example, fuel costs are widely recognized as being caused by the production of energy, so such costs are allocated among customer classes based upon an "energy" allocator calculated from the relative amounts of loss-adjustment kWh sales to each class. The same principle requires that the Commission not attribute utility costs to customer classes based upon the relative number of customers in each class unless it has been shown that the existence of a customer or changes in the number of customers being served causes such costs to be incurred.

Q. IF A SINGLE CUSTOMER IS ADDED TO OR REMOVED FROM HECO'S DISTRIBUTION SYSTEM, WHAT COSTS ARE CAUSED BY THAT CUSTOMER ADDITION/REMOVAL?

A. Each customer is generally served by a discrete meter and service line. These are the types of distribution facilities that are unique to individual

customers and that are caused by the connection or disconnection of specific customers. Thus, meters and services investment and customer accounting/service expenses are properly classified by HECO as "customer-related" costs and are allocated based upon weighted customer counts within each class. I believe that the Commission should limit the customer classified costs to those costs that vary directly with the number of customers.

In the CCOS scenario captioned as "Based on Minimum System", HECO has *reached further into the distribution network, beyond the costs that* actually vary directly with customers that are added or lost, by adopting abstract fictional theories about distribution poles, lines and transformers that assume some fraction of these costs also vary directly with the number of customers being served. There has been no showing by HECO that it must add poles, distribution lines or transformers in direct proportion to changes in the numbers of customers being served.

Q. IS THE MINIMUM-SIZED SYSTEM THEORY THAT HECO RELIED UPON A REASONABLE BASIS TO ESTIMATE A CUSTOMER COMPONENT OF DISTRIBUTION NETWORK COSTS?

A. No. This theoretical approach is flawed in the way it double counts cost responsibility. The minimum-sized distribution system that is assumed to be constructed and required to connect customers is actually capable of also

serving a large percentage of customer demand, particularly for residential customers. However, no credit is given for this demand serving capability when allocation factors are devised and applied to the "demand" component of distribution network costs. Under HECO's proposed CCOS, the residential customer class pays for the majority of the deemed customer component of the distribution network which is capable of meeting much of the residential KW demand. Then, residential customers pay again for the demand component based upon their full measured demands. This problem is explained in the NARUC Electric Utility Cost Allocation Manual at page 95:

> The results of the minimum-size method can be influenced by several factors. The analyst must determine the minimum size for each piece of equipment; "Should the minimum size be based upon the minimum size equipment currently installed, historically installed, or the minimum size necessary to meet safety requirements?" The manner in which the minimum size equipment is selected will directly affect the percentage of costs that are classified as demand and customer costs.
>
> Cost analysts disagree on how much of the demand costs should be allocated to customers when the minimum-size distribution method is used to classify distribution plant. When using this distribution method, the analyst must be aware that the minimum-size distribution equipment has a certain load-carrying capability, which can be viewed as a demand-related cost.
>
> When allocating distribution costs determined by the minimum-size method, some cost analysts will argue that some customer classes can receive a disproportionate share of demand costs. Their rationale is that customers are allocated a share of distribution costs classified as demand-related. Then those customers receive a second layer of demand costs that have been mislabeled customer costs because the *minimum-size method was used to classify those costs.*

This double counting problem has not been resolved in HECO's CCOS.

Q. DOES HECO DISPUTE THAT ITS MINIMUM-SIZED SYSTEM IS CAPABLE OF SERVING SIGNIFICANT AMOUNTS OF CUSTOMER DEMAND?

A. No. In its response to CA-IR-490, at pages 9 and 10, HECO confirmed that its minimum-sized distribution transformer is 25kvA and that a 25kvA distribution transformer can serve about 25kW of load, which is equivalent to the peak demands of approximately five individual residential customers. However, HECO's "Based on Minimum System Study" CCOS scenario recognizes no demand serving credit for the load serving ability of such a minimum-sized transformer, which credit would be needed to avoid the double counting problem. The minimum-sized primary conductor is sized to serve approximately 140 individual residential customers, yet no reduction to customer class demands has been made to account for the load serving ability of conductors treated as customer-related.[20]

Q. IS IT ALWAYS NECESSARY FOR HECO TO CONSTRUCT NEW DISTRIBUTION LINES IN ORDER TO CONNECT AND SERVE CUSTOMERS, AS ASSUMED IN HECO'S CLASSIFICATION OF SUCH COSTS AS A "CUSTOMER" COST?

A. No. Some customers are connected to existing network facilities by merely adding service lines and meters. Adding other customers may require an

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[20] CA-IR-490, Attachment 1 at pages 7 and 8 contain a resubmission of CA-IR-177 and other Information Requests from the Company's 2005 rate case, since HECO has not updated its minimum system study since it was prepared for use in Docket No. 04-0113.

extension of network facilities, but such extensions are not directly related to the number of customers being served. For example, adding an apartment building or other high-density residential developments may entail minimal new investment in distribution facilities, while adding dozens or hundreds of new customers. The challenges associated with correlating distribution network investment levels for poles, conductors and transformers to the number of customers being served is evident when consideration is given to variables such as customer density, the amount of existing electrical infrastructure, the geographic dispersion of customers and resulting proximity of existing facilities and the estimated demand levels of specific customers that all influence distribution network investment levels.

Q. HAS HECO PREPARED ANY STUDIES, WORKPAPERS OR ANALYSES TO SUPPORT THE STATEMENT AT PAGE 15 OF MR. YOUNG'S TESTIMONY THAT, "...DISTRIBUTION LINES AND TRANSFORMERS ARE ASSIGNED TO DEMAND AND CUSTOMER COMPONENTS (WHERE THE MINIMUM SYSTEM METHOD IS APPLIED), SINCE THE SIZE AND COST OF THESE FACILITIES ARE DEPENDENT NOT ONLY THE CUSTOMERS' LOAD, BUT ALSO ON THE TYPE AND LOCATION OF CUSTOMERS"?

A. No. The minimum system study does nothing to consider or differentiate among "types" of customers or the "location" of customers. Instead, the minimum system approach simply assumes that the "number" of customers

explains how the designated customer-related portion of such costs is caused. There has been no study or showing by HECO of any correlation between the number of customers and distribution network costs. Moreover, the Company's CCOS minimum system approach completely fails to account in any way for either the "type" or the "location" of customers.

Q. DO ANY ACTUAL CUSTOMER CHANGES INVOLVING HECO HELP TO ILLUSTRATE THE PROBLEM CAUSED BY CLASSIFYING DISTRIBUTION NETWORK COSTS AS CUSTOMER-RELATED?

A. Yes. Several years ago, the Kukui Gardens apartments were converted by HECO from master metering to individual service metering pursuant to Commission approval in Docket No. 03-0107. Upon conversion, an existing 32 year-old customer-owned distribution system was replaced with a utility-owned system under an arrangement through which the Developer, Kukui Gardens Corporation would "essentially finance the entire project cost with a cash contribution-in-aid-of-construction ("CIAC") of $516,384; and an in-kind contribution of $250,000 for the duct, handholes/manholes, and pullboxes."[21] As part of this project, the number of customers being served increased from one master-metered account to approximately 800 separately metered accounts, which would directly increase the allocation of customer-classified distribution poles, lines and conductors to the residential

[21] HECO Application in Docket No. 03-0107, and CA-IR-398 in Docket No. 2006-0386 at page 6.

class.[22] However, the incremental investment required to serve these 800 new customers was essentially zero, given the CIAC provided by the developer. More importantly, the construction that was done at Kukui Gardens was not to extend the distribution network, as implied by HECO's classification of distribution network plant as customer-related, but rather to replace existing, old distribution plant that was "in urgent need of replacement."[23]

Q. ARE YOU AWARE OF ANY ELECTRIC UTILITIES THAT, UNLIKE HECO, DO NOT CLASSIFY DISTRIBUTION POLES, LINES OR TRANSFORMERS AS "CUSTOMER-RELATED" COSTS IN THE CONDUCT OF EMBEDDED COST OF SERVICE ANALYSES?

A. Yes. In prior rate case proceedings, Public Service Company of Oklahoma and PSI Energy, Inc. classified all distribution poles, lines and line transformers as demand-related costs in the CCOS studies filed with the Oklahoma and Indiana regulatory commissions.[24] Similarly, Arizona Public Service Company classified all of its distribution poles, lines and transformers as entirely demand-related costs in the CCOS presented by that utility in a

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22 CA-IR-398 in Docket No. 2006-0386, at part (b).

23 HECO Application in Docket No. 03-0107, and CA-IR-398 in Docket No. 2006-0386, at page 6.

24 Public Service Company of Oklahoma, Oklahoma Corporation Commission Cause No. PUD 200300076 filed January 23, 2004, Workpaper L-5, page 2, "Classification of Rate Base"; PSI Energy Inc., Indiana Utility Regulatory Commission Cause No. 42359 filed March 28, 2003, Petitioner's Exhibit Z, Testimony of Kent K. Freeman, page 24.

recent rate case.[25] This treatment of all distribution network poles, lines and transformers as demand-related avoids the controversy and allocation distortions associated with the HECO "customer" classification approach.

Q. HAVE OTHER RECOGNIZED REGULATORY AUTHORITIES, BEYOND THE REGULATORY JURISDICTIONS YOU HAVE JUST MENTIONED, CONCLUDED THAT CUSTOMER CLASSIFICATION OF DISTRIBUTION NETWORK COSTS, USING A MINIMUM SYSTEM APPROACH, IS INAPPROPRIATE?

A. Yes. Dr. James C. Bonbright addressed this issue in his widely recognized book, "Principles of Public Utility Rates", acknowledging that utilities may attempt to estimate the costs of the hypothetical minimum system, which he characterized as "indefensible" because such costs are not "caused" by the addition of customers to the utility system; nor are they strictly related to the customers' demand:

> The FERC Handbook (1983, p.52) recognizes that while there are no hard-and-fast rules for allocating customers costs, as they depend on the type of costs involved, the issue is not usually litigated as the dollars involved are usually not substantial. The really controversial aspect of customer-cost imputation arises because of the cost analyst's frequent practice of including, not just those costs that can be definitely earmarked as incurred for the benefit of specific customers, but also a substantial fraction of the annual maintenance and capital

[25] Arizona Public Service Company, Docket No. E-01345A-05-0816, Testimony of David J. Rumolo, Workpaper DJR_WP1, pages 11-13 show that utility's classification and allocation of overhead and underground distribution facility costs on a demand basis, with only services, meters and lighting accounts classified and allocated on a customer basis.

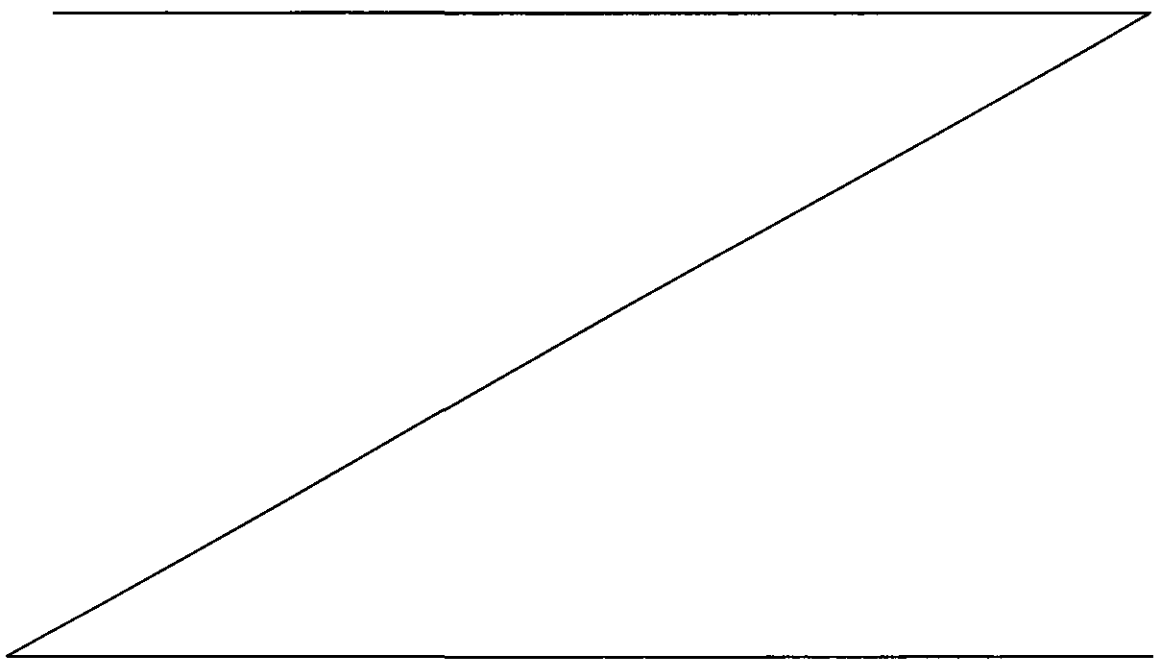
costs of the secondary (low-voltage) distribution system – a fraction equal to the estimated annual costs of a hypothetical system of minimum capacity. This minimum capacity is sometimes determined by the smallest sizes of conductors *deemed adequate to maintain voltage while keeping them from* falling of their own weight. In any case, the annual costs of this phantom, minimum-sized distribution system are treated as customer costs and are deducted from the annual costs of the existing system, only the balance being included among those demand-related costs to be mentioned in the following section. Their inclusion among the customer costs is defended on the ground that, since they vary directly with the area of the distribution system (or else with the lengths of the distribution lines, depending on the type of distribution system), they therefore vary directly with the number of customers. Alternatively they are calculated by the "zero-intercept" method whereby regression equations are run relating cost to various sizes of equipment and eventually solving for the cost of a zero-sized system (Sterzinger, 1981).

What this last-named cost imputation overlooks, of course, is the very weak correlation between the area (or the mileage) of a distribution system and the number of customers served by this system. For it makes no allowance for the density factor (customers per linear mile or per square mile). Our casual empiricism is supported by a more systematic regression analysis in (Lessels, 1980) where no statistical association was found between distribution system costs and numbers of customers. Thus, if the company's entire service area stays fixed, an increase in number of customers does not necessarily betoken any increase whatever in the costs of a minimum-sized distribution system. While, for the reasons just suggested, the inclusion of a minimum-sized distribution system among the customer-related costs seems to us clearly indefensible, its exclusion from the demand-related costs stands on much firmer ground.

For this exclusion of minimum-sized distribution system costs makes more plausible the assumption that the remaining cost of the secondary distribution system is a cost which varies continuously (and perhaps, even more or less directly) with the maximum demand imposed on this system as measured by peak load. But if the hypothetical cost of a minimum-sized distribution system is properly excluded from the

> demand-related costs for the reasons stated previously, to which cost function does it then belong? The only defensible answer, in our opinion, is that it belongs to none of them. Instead, it should be recognized as a strictly unallocable portion of total costs. And this is the disposition that it would probably receive in an estimate of long-run marginal costs. But fully distributed cost analysts dare not avail themselves of this solution, since they are prisoners of their own assumption that "the sum of the parts equals the whole". They are therefore under impelling pressure to fudge their cost apportionments by using the category of customer costs as a dumping ground for costs that they cannot plausibly impute to any of their other cost categories.[26]

This challenge in attribution of cost responsibility for a distribution network that serves a joint purpose of connecting customers and meeting their demands does not justify the adoption of theoretical approaches that are not economically rational.



[26] James C. Bonbright (with editions co-authors Albert L. Danielsen and David R. Kamerschen.) "Principles of Public Utility Rates" Public Utility Reports, Inc., 1988 (2nd edition), p. 491-492.

Q. IN A PREVIOUS HELCO RATE CASE, DOCKET NO. 99-0207, THE CONSUMER ADVOCATE CHALLENGED THE COMPANY'S MINIMUM SYSTEM APPROACH AND PROPOSED TO ALLOCATE DISTRIBUTION COSTS SOLELY ON THE BASIS OF DEMAND RATHER THAN ALLOCATING PARTIALLY BASED ON THE NUMBER OF CUSTOMERS.[27] HOW DID THE COMMISSION RESPOND?

A. According to Decision and Order No. 18365 at page 79, "If the minimum system and zero intercept methods are rejected, no reasonable alternative methodology is provided by the Consumer Advocate. Based on our review, the commission concurs with the methodologies used by HELCO in its classification of distribution plant costs as demand- and customer-related, in accordance with the NARUC Manual."

Q. HAS HECO NOW PRESENTED A REASONABLE ALTERNATIVE METHOD TO ALLOCATE DISTRIBUTION SYSTEM COSTS?

A. Yes. Allocating distribution poles, lines and transformer costs on the basis of 100 percent demand is a reasonable alternative under the circumstances. It is an alternative that has been accepted in other jurisdictions, as noted above, and solves the intractable problems associated with the Company's minimum system calculations. I respectfully submit that the Commission need not feel

[27] Decision and Order No. 18365, filed on February 8, 2001, in Docket No. 99-0207 at 78 and 79.

bound to force-fit a customer classification onto distribution network facilities using the problematic methods described in the NARUC Cost Allocation Manual, when doing so represents little more than what Dr. Bonbright referred to as "impelling pressure to fudge their cost apportionments by using the category of customer costs as a dumping ground for costs that they cannot plausibly impute to any of their other cost categories."

The only distribution system costs that vary directly with the number of customers being served are the service lines, meters and installations on customer premises that are used to connect individual customers to the distribution network.[28]

Q. EARLIER YOU REFERENCED THE ELEMENT OF JUDGMENT REQUIRED IN PREPARING CCOS STUDIES. WOULD IT BE REASONABLE FOR THE COMMISSION TO CONSIDER MORE THAN ONE APPROACH TO CCOS ANALYSIS IN THIS DOCKET, RECOGNIZING THAT ALTERNATIVE ANALYTICAL APPROACHES CAN EACH HAVE MERIT?

A. Yes. The Commission can review the results of both the "100 percent demand" and the "minimum system study" approaches presented by Mr. Young and find more than one acceptable approach to CCOS analysis to be reasonable. While I believe that the "100 percent demand" classification of

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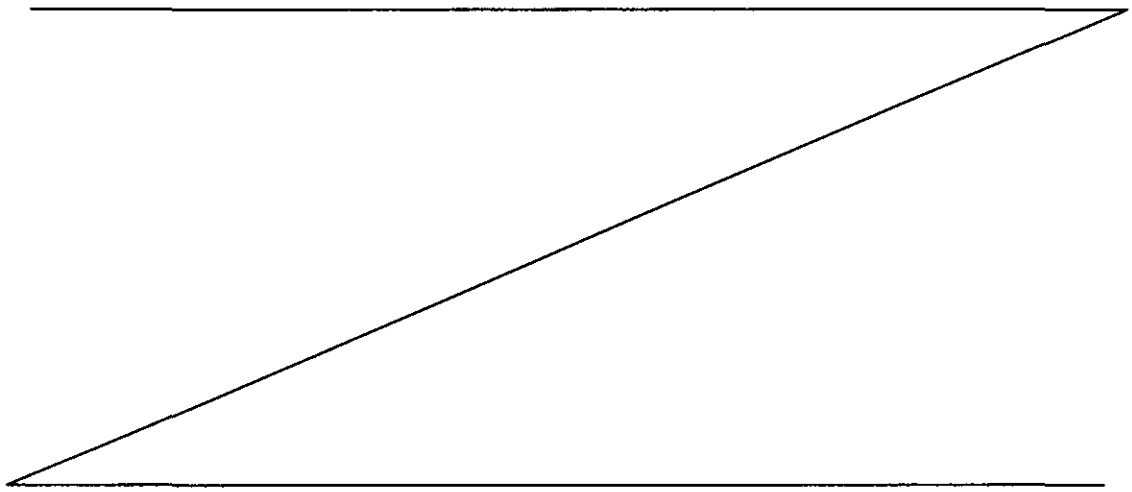
28 Notably, these are the only distribution plant accounts that are clearly to be allocated solely on a weighted customer basis according to page 87 of the NARUC Cost Allocation Manual relied upon by Mr. Young.

distribution network costs is much more reflective of cost causation for all of the reasons stated herein, it would not be unreasonable for the Commission to also consider the HECO minimum system approach that employs methods previously accepted by the Commission.

Q. SHOULD THE COMMISSION RELY SOLELY UPON CLASS COST OF SERVICE ALLOCATIONS TO DETERMINE THE RATE CHANGES IN THIS CASE?

A. No. Cost of service results are estimates based upon methods and judgments of analysts that may vary significantly. In addition, cost of service results can change significantly from one test period to another, due to shifts in load conditions, expense levels or methodology changes. Therefore, cost of service results should be used only as a "guide" in determining the direction rate changes should occur, while other factors must also be considered by the Commission.



Q. IS THE COMPANY'S CLASS COST OF SERVICE STUDY BASED UPON RELATIVELY STALE INFORMATION THAT MAY ALSO DETRACT FROM THE ACCURACY AND RELEVANCE OF THE STUDIES PRESENTED BY MR. YOUNG?

A. Yes. The Class Load Study that supports all of the demand allocation factors in the test year CCOS studies was performed in 2003.[29] Data gathering for HECO's next class load study commenced January 1, 2008 and was expected to be completed in December of 2008, with a new draft load study report expected to be completed in the third quarter of 2009. Additionally, HECO has not updated its minimum system study since the 2005 test year rate case. The use of relatively "stale" load study data and distribution classification data argues for placement of less importance upon CCOS results in this proceeding in determining the revenue increase distribution.

III. REVENUE INCREASE DISTRIBUTION.

Q. DOES HECO ADVOCATE DISTRIBUTING ITS PROPOSED RATE INCREASE AMONG THE VARIOUS CUSTOMER CLASSES BASED UPON RIGID APPLICATION OF ITS CCOS ALLOCATIONS?

A. No. HECO witness Mr. Alm states, "The Company is allocating the requested revenue increase as an equal percentage increase to each rate schedule." He explains this proposal by reference to relatively high electric bills for residential

[29] HECO T-22, at 18; HECO-2211, at 3, CA-IR-135.

consumers due to the current fuel prices" and states that, "This is consistent with the Company's rate design proposals in Docket No. 2006-0386." HECO-2203, page 2, as revised in Mr. Young's Rate Case Update Attachment 1 on page 4, illustrates the proposed 5.37% revenue increase above currently effective rates that the Company now seeks for each rate schedule.[30]

Q. DOES THE CONSUMER ADVOCATE AGREE WITH MR. ALM'S PROPOSED EQUAL PERCENTAGE RATE INCREASE ACROSS CUSTOMER CLASSES IN THIS DOCKET?

A. Yes. The Consumer Advocate supports an equal percentage distribution of any revenue increase in this Docket, for the following reasons:

- While the revenue requirement recommended by the Consumer Advocate is lower than the $100 million HECO has asserted, the revenue change is still substantial and moderation of rate increase impacts upon customers is an important objective.
- The high fuel cost and Energy Cost Adjustment Clause ("ECAC") rate impact rationale for HECO's proposed across the board revenue increase distribution may continue to apply in the future, given the recent volatility in ECAC rates that have impacted customers.

[30] In its response to CA-IR-452(a), HECO states that its proposal to allocate the rate increase equally to all rates schedules has not changed even though fuel prices recovered through the ECAC have recently declined.

- The potentially significant cumulative future impact of the many newly proposed decoupling, Clean Energy Initiative, Advanced Meter Infrastructure ("AMI") and other surcharges that are under consideration will place additional upward pressure on customers' electric bills.
- Existing class ROR results at current interim rates are not seriously disparate now and are projected by HECO to move closer to parity under an equal percentage distribution of the rate increase.

Q. IS IT APPROPRIATE, AS A MATTER OF REGULATORY POLICY, TO CONDITION THE APPLICATION OF COST OF SERVICE RESULTS UPON POLICY CONSIDERATIONS SUCH AS CUSTOMER IMPACT?

A. Yes. HECO was quite correct in tempering its use of cost allocation study results upon customer impacts and acceptance, as stated in Mr. Alm's testimony. Cost of service allocations are inherently imprecise and dependent upon a multitude of judgments regarding cost causation, as well as imperfect data regarding customer demands and cost classifications. Therefore, cost of service must serve only as a guide and not dictate the distribution of revenue changes among customer classes. It is essential to consider many factors, other than indicated class cost of service results, in determining an appropriate distribution of revenue increases. These other factors include:

- Revenue stability for the utility - rates should not be abruptly changed, creating a risk that customers may modify their demand levels or migrate between rates, producing unexpected revenue impacts.
- Gradualism in customer impacts - customer understanding and acceptance of rate changes is dependent upon avoidance of abrupt monthly bill impacts.
- Administrative practicality – rate structures and the relationship between rates must be rational and simple to apply and understand.
- Public policy priorities such as conservation or low-income assistance - purely cost based rates may fail to meet other desirable public policy objectives.

Q. HOW DOES THE COMPANY'S PROPOSED EQUAL PERCENTAGE RATE INCREASE APPROACH IMPACT THE CCOS INDICATED RELATIVE RATES OF RETURN AMONG RATE CLASSES?

A. Rate Case Update HECO T-22, Attachment 1, page 6 (Revised Exhibit HECO-2205) indicates that HECO's proposed equal percentage increase actually has the effect of improving the "ROR Index" for most of the various rate schedules, moving each rate class except Schedule DS closer to a 100 percent Index. A similar pattern of movement toward equal class ROR results is revealed under the minimum system approach at Rate Case Update

HECO T-22, Attachment 1, page 4 using the Company's proposed equal percentage increase approach.

Q. WHAT IS THE CONSUMER ADVOCATE'S RECOMMENDATION REGARDING THE DISTRIBUTION OF ITS RECOMMENDED RATE INCREASE AMONG CUSTOMER CLASSES?

A. As noted above, the rate increase proposed by the Consumer Advocate should be implemented as an equal percentage revenue increase among customer classes, *given the size of the increase and in consideration of* customer impacts as well as cost of service. In the event the Commission desires more aggressive movement toward indicated cost of service, Schedules G and DS might receive a somewhat below average revenue increase, while Schedule J and lighting Schedule F might receive a somewhat above average revenue increase.

IV. RESIDENTIAL RATE DESIGN ISSUES.

Q. WHAT IS PROPOSED BY MR. YOUNG WITH REGARD TO RATE DESIGN FOR RESIDENTIAL RATE SCHEDULE R?

A. At page 26 of his Direct Testimony, Mr. Young proposes to increase the existing Schedule R customer charge from the $8.00 monthly level, that was stipulated as reasonable in Docket Nos. 04-0113 and 2006-0386, to $9.00 per month. He then recommends that the energy rates in Schedule R be modified

to an inclining block design, comparable to what was proposed and agreed upon with the Consumer Advocate in HELCO Docket No. 05-0315, MECO Docket No. 3006-0387 and in the previous HECO rate case Docket No. 2006-0386. The proposed inclining block residential rates would again have three tiers, breaking at 350kWH, 850kWh and at usage over 1,200 kWh per month. Pricing within the tiers is designed so that lower than average percentage rate increases occur for usage in the first tier, approximately average percentage increases in the middle tier and above average increases are experienced for usage in the last tier.[31]

Q. IN THE RECENT RATE CASES INVOLVING THE HECO COMPANIES, THE CONSUMER ADVOCATE SUPPORTED THE INCLINING BLOCK RATES BASED UPON COST OF SERVICE, CUSTOMER IMPACT AND CONSERVATION CONSIDERATIONS. DO THESE SAME CONSIDERATIONS CAUSE YOU TO AGAIN SUPPORT THE HECO PROPOSAL FOR INCLINING BLOCK RESIDENTIAL RATES?

A. Yes. Inclining block rate structures help to strengthen the incentive for residential customers to invest in conservation and can increase affordability of service for customers with smaller homes and lower monthly usage levels. With relatively higher prices in the later blocks, this rate structure provides

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[31] Rate Case Update HECO T-22, Attachment 1 at page 26 (updating HECO-2216, page 1) illustrates this pattern of percentage rate increase impacts.

better "payback" on conservation measures that reduce consumption at the margin, which is like to occur in the later energy blocks. Inclining block rates can also be effective in mitigating rate increase impacts upon lower income consumers who elect to limit their usage to the lower tiers of the rate. Additionally, any concerns that inclining block rates for HECO may contribute to revenue instability concerns are now fully addressed by the new Revenue Balancing Account ("RBA") decoupling provisions being jointly proposed by HECO and the Consumer Advocate in Docket No. 2008-0274. Decoupling will ensure that HECO fully collects its base revenue requirement even if customers more aggressively conserve energy usage in the future.

Q. AT THE COMPANY'S PROPOSED LEVEL OF RATE INCREASE, ABOVE CURRENT EFFECTIVE RATE LEVELS, WILL THE PROPOSED RESIDENTIAL INCLINING BLOCK RATES PRODUCE ACCEPTABLE CUSTOMER IMPACTS?

A. Yes. HECO-2216[32] pages 1 and 2 illustrate Schedule R customer impacts at proposed rate levels and show how the inclining block structure would produce gradually higher percentage bill increases as usage grows. The pricing spread between tiers that are proposed by HECO is gradual, such that impact of the proposed rate increase upon even among the largest residential customers is below seven percent. At the Consumer Advocate's lower

[32] HECO-2216 is updated in Rate Case Update T-22 at Attachment 1, page 26.

recommended revenue requirement, all customer impacts would be moderated from the levels shown by HECO.

Q. SHOULD THE COMMISSION APPROVE THE $1.00 PER MONTH INCREASE IN THE SCHEDULE R SINGLE-PHASE CUSTOMER AND MINIMUM CHARGE TO EXISTING SINGLE PHASE AND THREE-PHASE CUSTOMER CHARGES THAT ARE PROPOSED BY MR. YOUNG (HECO T-20) AT PAGE 26?

A. No. There are several reasons why the residential customer/minimum charges should not be changed at this time:

- The only cost support provided by Mr. Young for this change is his reference to estimated "residential customer cost of $23.93" at T-22, page 27.[33] However, much lower unit customer costs are quantified when the more reasonable 100% demand classification of distribution network costs are accepted, where this value is reduced to $14.50.[34]
- Increased residential customer and minimum charges were agreed upon and implemented in June 2008 as part of permanent rates from

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33 This value actually increases to $27.17 in Mr. Young's Rate Case Update at Attachment 3, page 68, where the minimum system approach is retained.

34 Rate Case Update, HECO T-22, Attachment 3, page 66 of 70.

Docket No. 04-0113[35] and further increases at this time would cumulative to that agreement and excessive.

- The new Residential inclining block energy pricing that is designed to encourage conservation by focusing price increases upon the largest users of service and this policy is frustrated by an increase in fixed monthly customer charges that do not reward conservation.
- The revenue stability benefit of higher customer and minimum charges is no longer important to HECO when decoupling and the new Revenue Balancing Account is implemented to ensure that approved base revenue levels are fully recovered by HECO.

HECO should change only the Schedule R energy charges, revising the three tiers and with the revised roll-in of Base Energy Charge amounts conformed to the ultimate revenue levels, approved by the Commission at equal class percentage revenue increases and at the lower fuel prices presently being experienced.[36]

Q. AT PAGE 27, MR YOUNG REFERENCES THE WAIVER FOR CUSTOMERS IN THE LIHEAP PROGRAM FOR THE HIGHER SECOND AND THIRD TIER

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35 See Docket No. 04-0113 Stipulated Settlement Letter dated September 16, 2005 at Exhibit VIII, page 1.

36 HECO-2213 supports the Company's proposed Base Fuel Energy Charge. These calculations should be revised, as required to conform to the lower fuel cost levels described by Mr. Herz in the CA-T-2.

ENERGY CHARGES. IS THIS PROVISION ACCEPTABLE TO THE CONSUMER ADVOCATE?

A. Yes. This provision for the benefit of low income customers is needed until HECO has developed and implemented the Lifeline Rate that is required as part of the HCEI Agreement.[37]

V. COMMERCIAL AND LIGHTING RATE DESIGN ISSUES.

Q. WHAT CHANGES TO THE COMMERCIAL RATE STRUCTURE ARE PROPOSED BY HECO IN THIS DOCKET?

A. Mr. Young proposes a series of changes to the structure of its commercial rates, including the following changes:

- Elimination of Schedule H in response to proposals of the Consumer Advocate in previous rate cases.
- Simplification of Schedule P from the existing three rate structure by voltage level (now designated PS, PP and PT) to a two rate structure that distinguishes the Schedule P customers that are "directly served" by a substation (to be designated Schedule DS) from the remaining customers that are not directly served. These changes were made pursuant to agreements reached to resolve prior rate case issues between HECO and the Department of Defense.

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37 HCEI Agreement, Section 20. HECO, with input from the Consumer Advocate, is developing a Lifeline Rate proposal for consideration by the Commission, which should be filed by the end of April 2009.

- Clarification of Schedule G, J and P availability clauses, to allow reclassification by HECO when customer loads are reduced for 12 consecutive months, and
- Simplification of the Schedule P demand rates and Schedules J and P energy charge structures to replace declining blocks with single tier demand/energy pricing.
- Conforming Supply Voltage Delivery provisions in the commercial tariffs to the Company's updated system loss study.

These changes are intended to simplify and rationalize the prices offered by HECO, making it easier for customers to predict and manage their energy costs on an appropriate rate schedule.

Q. DOES THE CONSUMER ADVOCATE SUPPORT THESE COMMERCIAL RATE STRUCTURE CHANGES?

A. Yes.

Q. WHAT IS HECO'S PROPOSAL WITH RESPECT TO CUSTOMER AND MINIMUM CHARGES FOR THE RESTRUCTURED COMMERCIAL SERVICE SCHEDULES G, J, P AND DS?

A. The Company has proposed no changes in customer charges for Schedules P and DS, moderate increases in customer charges for Schedules G and F, and

very large increases in customer charges for Schedule J. The proposed increases are as follows:

Customer Charges	Present	Proposed	Percent
Schedule G - Single phase	$ 30	$ 32	7%
Schedule G - Three phase	$ 55	$ 61	11%
Schedule J - Single phase	$ 50	$ 70	40%
Schedule J - Three phase	$ 70	$ 100	43%
Schedule F - Lighting	$ 20	$ 22	10%

These increases would be additive to the higher customer charges that were recently implemented by HECO in June 2008, when the permanent rate design agreed upon by the parties to Docket No. 04-0113 became effective, including the higher customer charges.[38]

Q. DOES THE CONSUMER ADVOCATE SUPPORT THE COMPANY'S PROPOSED ADDITIONAL INCREASES TO THE SCHEDULE G, J AND F CUSTOMER CHARGES, ABOVE THE CHARGE LEVELS THAT WERE RECENTLY AGREED UPON IN DOCKET NO. 04-0113?

A. Yes, but only if such increases are moderated so as to prevent unreasonable customer impacts when considered with the customer charge increases that occurred just last year. To this end, the Consumer Advocate would support limiting HECO's proposed Schedule J customer charge increases to 10% of

38 In the Stipulated Settlement Letter dated September 16, 2005 in Docket No. 04-0113, Exhibit VIII shows that Schedule G customer charges were increased to $30, Schedule J and Schedule F customer charges were accepted at the higher "levels proposed in HECO-R-2224".

existing prices, or $55 and $77 for single-phase and three-phase service, respectively.

Q. WHAT IS PROPOSED BY HECO WITH RESPECT TO DEMAND CHARGE RATES IN SCHEDULES J, P AND DS?

A. For Schedule J, HECO has proposed a substantial demand charge increase from $8.50 to $14.00 per kW. Schedule PS is to be renamed Schedule P, with elimination of the present three-tier declining block demand charges of $14.35 / $13.85 /$12.85 per KW, and is to receive a much higher single-tier demand charge of $22.00 for all KW.[39] For new Schedule DS, where customers were previously served under Schedules PP and PT, the Company has proposed a demand charge of $18.00 per KW.[40] The large increases to demand charges are explained by Mr. Young at page 35 where he claims, "HECO continues to propose increasing the amount of demand costs recovered by demand charges, which is also a movement towards aligning rates with the cost of service."

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39 HECO T-22, pages 31 and 32.

40 Id. page 35.

Q. ARE THE PROPOSED LARGE INCREASES IN DEMAND CHARGES SUPPORTED BY UNIT COST OF SERVICE EVIDENCE?

A. Yes. Mr. Young's testimony notes that the much higher proposed demand charges represent only a fraction of full unit demand cost under the Company's CCOS approach and such unit demand costs would be even higher under the Consumer Advocate's demand classification of all distribution network facilities and expenses. However, HECO's existing rate structure has relatively low demand charges that should be adjusted gradually upward, so as to mitigate rate impacts upon the Company's lower load factor commercial customers.

Q. CAN THE UNDESIRABLE RATE IMPACTS UPON LOWER LOAD FACTOR COMMERCIAL CUSTOMERS YOU MENTION BE OBSERVED IN HECO'S PREFILED EVIDENCE?

A. Yes. For example, at HECO-2216 page 6, for each level of "KW" demand that is shown, the lower load factor customers that use energy less intensively have the lower "KWH/KW" values in each block of data.[41] Primarily as a result of the very large increases in proposed demand charges, HECO's proposed "Increase %" is unacceptably large for customers using fewer KWH per KW. Aside from the rate shock potential for such customers, the resulting very small percentage increases for the heaviest users of energy with high

[41] HECO-2216 was revised in Rate Case Update T-22, at Attachment 1, page 31.

"KWH/KW" values is apparently at odds with the conservation considerations underpinning the Company's recommended inclining block rates for residential customers.

Q. WHAT SHOULD BE DONE WITH COMMERCIAL RATE SCHEDULE DEMAND CHARGES IN THIS DOCKET?

A. Gradual increases in such charges would be desirable, so as to move toward cost of service indicators without adverse customer impacts. When the final revenue requirement and revenue distribution among classes is resolved by the Commission, I recommend that demand charge increases be limited to no more than 125% of the demand charge levels that were recently implemented as part of the Docket No. 04-0113 rate changes, and which already represent significant increase percentages.[42] The elimination of declining block demand charges, as proposed for Schedule P, is desirable and consistent with other measures taken by HECO to move away from declining block rates.

Q. DO YOU AGREE WITH THE ENERGY CHARGE ELEMENTS OF MR. YOUNG'S PROPOSED COMMERCIAL SCHEDULE RATE DESIGN?

A. Yes. The Company has proposed recovery of the remaining class revenue requirement from energy rates, after consideration is given to the customers

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42 See Docket No. 04-0113 Stipulated Settlement Letter dated September 16, 2005 at Exhibit VIII.

charge revenues and the demand rates, as discussed above. For Schedule J and Schedule P, HECO has also proposed elimination of declining energy rates in favor of a single energy rate element. This change is conceptually complementary to the elimination of declining block rates to residential customers, as discussed above, and should help to simplify the administration and customer understanding of HECO commercial rates.

Q. WHAT IS PROPOSED BY HECO WITH RESPECT TO SCHEDULE F LIGHTING SERVICE RATES?

A. At page 36 of his testimony, Mr. Young proposes to increase the existing $20 per month customer charge within Schedule F to $22, and then eliminate the load factor driven declining block energy rates, substituting a single-block energy charge for all kWh consumed. This proposal eliminates the existing declining block rates and simplifies the Schedule F rate structure.

Q. WHAT ARE THE BILL IMPACTS ASSOCIATED WITH THIS PROPOSED LIGHTING RATE DESIGN?

A. HECO-2216 at page 10 indicates a modest bill savings for lighting customers using energy less intensively, as a result of elimination of the existing declining block structure. An approximate six percent bill increase would be experienced by Schedule F customers over current interim rate levels at higher usage levels.

Q. DOES THE CONSUMER ADVOCATE SUPPORT THE CUSTOMER CHARGE REVISION AND SINGLE-BLOCK ENERGY RATES PROPOSED BY HECO FOR SCHEDULE F?

A. Yes.

Q. GIVEN YOUR COMMENTS WITH REGARD TO PROPOSED RATE DESIGN FOR HECO ELECTRIC SALES RATE SCHEDULES R, G, J, P, DS AND F, HOW SHOULD THE FINAL RATE SCHEDULES IN THIS DOCKET BE ADAPTED TO THE REVENUE REQUIREMENT THAT IS ULTIMATELY APPROVED BY THE COMMISSION?.

A. The Company established its proposed customer charges and demand charges for its electric sales rate schedules, and then treated the energy charges as the residual rate element used to conform overall proposed pricing to the desired target revenue levels. This approach should be followed, after modification of the Company's proposed customer and demand charges noted herein, to meet the overall revenue requirement and the equal percentage distribution among customer classes recommended herein.

VI. **TIME OF USE RATES AND SCHEDULES.**

Q. HAS HECO PROPOSED ANY MODIFICATIONS TO ITS EXISTING RESIDENTIAL AND COMMERCIAL TIME OF USE ("TOU") RATES PILOT PROGRAM IN THIS DOCKET?

A. Yes. For the TOU-R Residential pilot program, the Company has advocated increasing the customer and minimum charges by $1.00 per month to match the changes being proposed for Schedule R. Then the TOU energy rates are modified to "*create a greater cost differential and therefore a greater incentive* for customers to move energy consumption off-peak" by increasing the on-peak charges and redefining time-of-use rating periods and off-peak prices. Mr. Young describes these proposals at HECO T-20, pages 41 to 43.

HECO proposes modifications to the existing TOU-C commercial pilot program to implement individual TOU schedules for non-demand and demand-metered commercial rate schedules, including a separate new TOU-G and TOU-J pilot tariff. Proposed customer charges are set at parity with the corresponding Schedules G and J for these rates. The more complex three-period energy rate structure is maintained in the same form and with comparable rate spreads from the underlying sales rates, including off-peak, mid-peak and priority-peak pricing. The new TOU-J demand rate would charge for a mid-peak demand at the same proposed demand rate as proposed for Schedule J, while a much higher "Priority Peak" demand rate is

charged when demands are established during the priority peak period. Mr. Young describes these proposals at HECO T-20, pages 43-36.

Q. WHAT IS THE CONSUMER ADVOCATE'S RESPONSE TO THE COMPANY'S TIME OF USE RATE PROPOSALS?

A. The Consumer Advocate does not object to the proposed structural changes to the TOU rates being proposed by HECO, since these are optional pilot program rates designed primarily to develop and understanding of customer response to different TOU rate structures and pricing levels.[43] The phased implementation of TOU pricing, limited by the delayed implementation of HECO's new Customer Information System, should permit continued analysis and further revision of these prices in future rate proceedings before any permanent or non-optional TOU structure is considered by the Commission. However, at this time and because the proposed TOU rates are aligned with the corresponding electric sales rates, the Consumer Advocate recommendations above that impact customer, minimum and demand charges should be mirrored within the final approved TOU rates. Additionally, when the energy rates are adjusted to "fit" the final approved revenue requirement, conforming changes to the TOU energy rates will be required.

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43 Customer participation since the June 20, 2008 approval of Schedule TOU-R had included only four customers and for Schedule TOU-C has included only one customer. The Company has not projected customer participation levels for 2009. (CA-IR-487) An earlier TOU-R Pilot Program ran from May 2003 to May 2006 to test two rate options with different rating periods, as more fully described in HECO's response to CA-IR-140.

Q. HECO ALSO OFFERS ITS COMMERCIAL CUSTOMERS SERVICE PRICING UNDER OPTIONAL SCHEDULE U, AND RIDERS T, M AND I, THAT ALLOW PARTICIPATING CUSTOMERS TO ALTER THE TIMING OF USAGE TO ACHIEVE LOAD MANAGEMENT GOALS. DOES THE CONSUMER ADVOCATE OBJECT TO THE COMPANY'S PROPOSED CHANGES TO THESE SCHEDULES/RIDERS, AS DESCRIBED AT PAGES 37 TO 41 OF MR. YOUNG'S TESTIMONY?

A. No.[44]

VII. OTHER RATE DESIGN MATTERS.

Q. IN DOCKET NOS. 04-0113 AND 2006-0386, THE CONSUMER ADVOCATE RAISED CONCERNS ABOUT THE NEED TO CONTINUE HECO'S RATE SCHEDULE H, THE COMPANY'S ONLY RATE SCHEDULE THAT WAS BASED UPON CUSTOMER END-USE CHARACTERISTICS. WHAT HAS HECO PROPOSED IN THIS DOCKET WITH RESPECT TO SCHEDULE H?

A. After closing Schedule H to new customers in Docket No. 2006-0386, HECO has now proposed to completely eliminate Schedule H at this time, and to migrate the remaining customers on this rate schedule to either Schedule G or Schedule J. The Consumer Advocate continues to support this change.

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[44] The Riders are rate options that are reviewed with customers by HECO account managers and representatives, to discuss generally how customer energy use might be modified to take advantage of the provisions offered in the rate options. The HECO Pricing Division will prepare a billing analysis for a customer to support decisions regarding participation in optional rates. (CA-IR-138)

Q. IN SETTLEMENT OF DOCKET NOS. 04-0113 AND 2006-0386, HECO AGREED TO PERFORM CERTAIN COST STUDIES IN SUPPORT OF COST-BASED POWER FACTOR RATE CREDITS. WHAT IS THE STATUS OF THOSE STUDIES?

A. This matter is discussed in the previously submitted Direct Testimony of Consumer Advocate witness Mr. Joseph Herz (CA-T-2) in this Docket.

Q. AT PAGE 46 OF HIS TESTIMONY, MR. YOUNG DISCUSSES STANDBY AND SCHEDULE Q SERVICE. HOW DOES THE CONSUMER ADVOCATE RESPOND TO THESE PROPOSALS?

A. The updating of Schedule SS Standby rates was provided for in Docket No. 2006-0497 and should be performed using the cost of service inputs ultimately approved by the Commission in this Docket No. 2008-0083. Consumer Advocate witness Mr. Herz (CA-T-2) addressed Schedule Q payment rates at page 34 of his Direct Testimony and in CA-WP-215.

Q. IS MR. HERZ ALSO RESPONSIBLE FOR THE CONSUMER ADVOCATE'S TESTIMONY REGARDING THE ECAC THAT IS DISCUSSED AT PAGES 47-48 OF MR. YOUNG'S TESTIMONY?

A. Yes.[45]

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[45] CA-T-2, pages 54-58.

Q. AT PAGE 48, MR. YOUNG INDICATES THAT HECO INTENDS TO CONTINUE ITS EXISTING INTEGRATED RESOURCE PLANNING COST RECOVERY PROVISION ("IRP CLAUSE"). DOES THE CONSUMER ADVOCATE OBJECT TO THIS PROPOSAL?

A. No. However, in my Direct Testimony on revenue requirement issues (CA-T-1) at pages 104-112 certain issues were raised regarding HECO's apparent overstatement of "base" DSM expenses and the potential for new revenues to offset such costs if HECO is selected to serve as a subcontractor to the PBF Administrator recently selected by the Commission. Then, at pages 113-114, I described the difficulties associated with quantification of a base expense allowance for IRP planning costs, given the pending transition to a new CESP process. These issues may impact the overall level of future expenses characterized by HECO as "incremental" for future recovery through the IRP Clause. The Commission should require HECO to fully account for and explain its allowed (in this rate case) versus actual "base" DSM and IRP expense, as well as any earned PBF subcontractor revenues, before any future recoveries of expense are allowed through the IRP Clause.

Q. AT PAGE 49 OF HECO T-22, MR. YOUNG REFERENCES THE HECO "GREEN PRICING PROGRAM PROVISION" FOR WHICH NO CHANGES ARE PROPOSED BY HECO. DOES THE CONSUMER ADVOCATE HAVE ANY RECOMMENDATIONS WITH RESPECT TO THIS PROVISION?

A. Yes. The Consumer Advocate proposes that HECO provide a complete accounting for the cumulative revenue collections under this program in its next rate case, indicating how such amounts have been credited to the Sun Power for Schools Pilot Program and any other programs that were not recognized in the determination of HECO revenue requirements.

Q. HOW SHOULD INTERIM RATES BE IMPLEMENTED IN THIS DOCKET?

A. The Consumer Advocate has recommended a single revenue requirement, rather than a phased-in rate change as proposed by HECO. Interim rates should be implemented at one time, using the equal percentage distribution among customer classes described herein and the "cents per kilowatt hour" surcharge methodology set forth at page 56 of HECO T-22. In the event HECO fails to achieve commercial operation of Campbell Industrial Park Combustion Turbine Unit No. 1 ("CIP CT-1") by year-end 2009, as assumed in the Consumer Advocate's revenue requirement calculations, the Company will need to submit calculations indicating the amount of interim revenue to be refunded to customers because of the inappropriate inclusion of CIP CT-1 within the average 2009 rate base and O&M expenses for the test year.

Q. AT PAGE 50, MR. YOUNG REFERENCES HECO'S PROPOSED INCREASE IN THE RETURNED PAYMENT CHARGE FROM $16.00 TO $22.00 THAT WAS ALSO PROPOSED IN DOCKET NO. 2006-0386. DOES THE CONSUMER ADVOCATE SUPPORT THIS PRICING CHANGE?

A. Yes. This increased charge was reviewed and recommended for approval in my CA-T-5 testimony in Docket No. 2006-0386 because the proposed rate is based upon actual processing and bank fees that are incurred by HECO to process returned payments from customers.

Q. TO THE EXTENT YOU HAVE NOT SPECIFICALLY ADDRESSED ANY PROPOSED HECO TARIFF REVISIONS THAT ARE SET FORTH IN HECO-106 OR IN MR. YOUNG'S TESTIMONY, SHOULD THE COMMISSION ASSUME THAT THE CONSUMER ADVOCATE SUPPORTS ALL OF THE COMPANY'S PROPOSED TARIFF REVISIONS?

A. No. For example, there are numerous pricing and terms revisions proposed within the Company's proposed tariffs associated with rate Schedules/Riders U, T, M, I, and for Standby Service on Schedule SS, based upon the Company's asserted revenue requirement and cost of service allocation results. These proposed new rates are clearly excessive in the context of the Consumer Advocate's revenue requirement recommendation. While not specifically addressed in my rate design testimony, the proposed rates for these Schedules and Riders should be developed to retain existing

rate structure relationships, in conformance with the equal percentage revenue increase among customer classes and other rate design recommendations described herein.

Q. DOES THIS CONCLUDE YOUR TESTIMONY ON COST OF SERVICE AND RATE DESIGN MATTERS?

A. Yes.

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing **DIVISION OF CONSUMER ADVOCACY'S DIRECT TESTIMONY (COST OF SERVICE/RATE DESIGN)** was duly served upon the following parties, by personal service, hand delivery, and/or U.S. mail, postage prepaid, and properly addressed pursuant to HAR § 6-61-21(d).

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